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PILLSBURY WINTHROP, LLP
P.O. BOX 10500
MCLEAN, VA 22102

EXAMINER
TRAN, TAM D

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Please find below and/or attached an Office communication concerning this application or proceeding.

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#11

Interview Summary	Application No. 09/687,141	Applicant(s) ARNON, BOAZ	
	Examiner Tam D. Tran	Art Unit 2676	

All participants (applicant, applicant's representative, PTO personnel):

(1) Tam D. Tran. (PTO)

(2) Sanford T. Colb

(3) Klony Lieberman

(4) Matthew C. Bella PTO

Date of Interview: Jan. 7, 2003

Type: a)☐ Telephonic b)☐ Video Conference
c)☑ Personal [copy given to: 1)☐ applicant 2)☑ applicant's representative]

Exhibit shown or demonstration conducted: d)☑ Yes e)☐ No.
If Yes, brief description: Two. example of the optical keyboard were given

Claim(s) discussed: all of record

Identification of prior art discussed: Korth (5,767,842)

Agreement with respect to the claims f)☐ was reached. g)☑ was not reached. h)☐ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: See attachment

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

i)☑ It is not necessary for applicant to provide a separate record of the substance of the interview(if box is checked).

Unless the paragraph above has been checked, THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN ONE MONTH FROM THIS INTERVIEW DATE TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

MATTHEW C. BELLA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

Examiner Note: You must sign this form unless it is an Attachment to a signed Office action.

Examiner's signature, if required

The attached proposed amended claims will be entered by the Examiner. The Examiner will update the search for amended claims 17-35 and new claims 37-52 which appear to distinguish from the art of record. If any of these claims are found to be allowable, the Examiner is authorized to cancel all the remaining claims without prejudice and proceed to allowance. If the Examiner finds art in the update search which precludes allowance of claims 17-35 and 37-52, he will notify applicant's representative at scolb@stc.co.il.

PROPOSED AMENDED C L A I M S

What is claimed is:

1. (Amended) A data input device comprising:

an optically generated image of a data input device, said image comprising at least one input zone actuable by an action performed thereon by a user;

a sensor operative to sense the action performed on said at least one input zone, and to generate signals in response to said action, said sensor being a position sensing device (PSD); and

a processor in communication with said sensor operative to process said signals for performing an operation associated with said at least one input zone.

2. The device according to claim 1 and further comprising a light source which generates a light beam, and beam-moving apparatus which moves said light beam to generate said optically generated image of said data input device.

3. The device according to claim 2 wherein said beam-moving apparatus comprises a mirror arranged to reflect said light beam.

4. The device according to claim 3 and further comprising an actuator operatively connected to said mirror, wherein said actuator moves said mirror to reflect said light beam to form at least a two-dimensional image of said data input device.

5. The device according to claim 2 wherein said beam-moving apparatus comprises a scanner arranged to scan said light beam, and an actuator operatively connected to said scanner, wherein said actuator moves said scanner to scan said light beam to form at least a two-dimensional image of said data input device.

6. The device according to claim 1 wherein said data input device comprises a key of a keyboard.

7. The device according to claim 1 wherein said data input device comprises a keyboard.

8. The device according to claim 1 wherein said data input device comprises a mouse

with at least one input button.

9. The device according to claim 1 wherein said data input device comprises a key of a touch pad.

Cancel claims 10 - 12 without prejudice.

13. (Amended) A data input device comprising:

an optically generated image of a data input device, said image comprising at least one input zone actuable by an action performed thereon by a user;

a sensor operative to sense the action performed on said at least one input zone, and to generate signals in response to said action, said sensor being an acoustic sensor; and

a processor in communication with said sensor operative to process said signals for performing an operation associated with said at least one input zone.

Cancel claim 14 without prejudice.

15. The device according to claim 1 wherein said processor is in communication with an output device.

16. The device according to claim 15 wherein said output device comprises at least one of a computer, a mobile telephone, a switch, and a palm-held computer/calculator.

17. (Amended) A method for data input comprising:

generating an optical image of a data input device, said image comprising at least one input zone actuable by an action performed thereon by a user;

performing an action on said at least one input zone;

sensing the action performed on said at least one input zone, said sensing comprising:

detecting light reflected from an object within a silhouette of said image; and

analyzing a reflection of said light to determine a spatial position of the object;

generating signals in response to said action; and

processing said signals for performing an operation associated with said at least one input zone.

18. The method according to claim 17 wherein the step of generating the optical image comprises generating an image of a keyboard and the step of performing an action comprises pressing keys of said image of said keyboard.

19. The method according to claim 18 wherein the step of processing said signals causes typing alphanumeric characters on at least one of a computer, cell phone, palm-sized computer/calculator and PDA.

20. The method according to claim 18 and further comprising modifying said image of said keyboard so as to modify a configuration of keys of said keyboard.

21. The method according to claim 18 and further comprising:

optically generating an image of characters of a first language on keys of said keyboard;

selecting a second language different from said first language; and

optically generating an image of characters of said second language on keys of said keyboard.

22. The method according to claim 17 wherein said optical image of said data input device is a holographic image.

23. The method according to claim 17 wherein said optical image of said data input device is generated by means of a monochromatic laser.

24. The method according to claim 17 wherein said optical image of said data input device is generated by means of multiple laser sources having different colors and wavelengths.

25. The method according to claim 17 wherein said optical image of said data input device is generated by means of a single laser source and using color and wavelength splitters to split light from said single laser source.

26. The method according to claim 17 wherein said optical image of said data input device is generated by means of differently polarized light beams.

Cancel claim 27 without prejudice.

28. The method according to claim 17 wherein the step of sensing comprises:

providing a light beam emanating from a light source;

detecting light reflected from an object within a silhouette of said image, corresponding to said light beam; and

analyzing an angle of said light beam and a time for the beam to be reflected back from said object to a reference to determine a spatial position of the object.

29. The method according to claim 28 wherein said reference comprises an optically readable reference.

30. The method according to claim 29 wherein said optically readable reference comprises a tangible bar code strip.

31. The method according to claim 29 wherein said optically readable reference comprises an optically generated bar code strip.

32. The method according to claim 28 wherein said optical image of a data input device is generated by the same light beam whose reflection is used to determine the spatial position of the object.

33. The method according to claim 17 wherein the step of sensing comprises:

providing a non-visible-light beam emanating from a non-visible-light source;

detecting an image of said non-visible-light impinging upon an object within a silhouette of said image of the data input device; and

analyzing said image of said non-visible-light to determine a spatial position of the object.

34. The method according to claim 33 wherein said non-visible-light beam comprises an infrared beam and said image of said non-visible-light comprises an infrared image of said

object.

35. The method according to claim 34 wherein the object comprises a finger and the step of analyzing comprises analyzing a difference in the infrared images of said finger before and after pressing the finger.

36. The method according to claim 17 and further comprising detecting light reflected from an object within a silhouette of said image and preventing said image from impinging upon said object.

Kindly add the following new claims:

37. A method according to claim 17 and wherein said sensing also comprises:

providing a light beam emanating from a light source.

38. A method according to claim 37 wherein the step of sensing also comprises:

analyzing an angle of said light beam to determine a spatial position of the object.

39. A method for data input comprising:

generating an optical image of a data input device, said image comprising at least one input zone actuable by an action performed thereon by a user;

performing an action on said at least one input zone;

sensing the action performed on said at least one input zone, said sensing comprising:

providing a non-visible-light beam emanating from a non-visible-light source;

detecting an image of said non-visible light impinging upon an object; and

analyzing said image of said non-visible light to determine a spatial position of the object;

generating signals in response to said action; and

processing said signals for performing an operation associated with said at least one input zone.

40. A method according to claim 39 wherein said step of analyzing also comprises:

analyzing an angle of said light beam to determine a spatial position of the object.

41. The method according to claim 39 wherein the step of analyzing also comprises:

analyzing an angle of said light beam and a time for the beam to be reflected back from said object to a reference to determine a spatial position of the object

42. A data input device comprising:

an optically generated image of a data input device, said image comprising at least one input zone actuable by an action performed thereon by a user;

a sensor operative to sense the action performed on said at least one input zone, and to generate signals in response to said action, said sensor being operative to

detect light reflected from an object within a silhouette of said image; and

analyze a reflection of said light to determine a spatial position of the object; and

a processor in communication with said sensor operative to process said signals for performing an operation associated with said at least one input zone.

43. The device according to claim 42 and further comprising a light source which generates a light beam, and beam-moving apparatus which moves said light beam to generate said optically generated image of said data input device.

44. The device according to claim 42 wherein said beam-moving apparatus comprises a mirror arranged to reflect said light beam.

45. The device according to claim 43 and further comprising an actuator operatively connected to said mirror, wherein said actuator moves said mirror to reflect said light beam to form at least a two-dimensional image of said data input device.

46. The device according to claim 43 wherein said beam-moving apparatus comprises a scanner arranged to scan said light beam, and an actuator operatively connected to said scanner, wherein said actuator moves said scanner to scan said light beam to form at least a two-dimensional image of said data input device.

47. The device according to claim 42 wherein said data input device comprises a key of a keyboard.

48. The device according to claim 42 wherein said data input device comprises a keyboard.

49. . The device according to claim 42 wherein said data input device comprises a mouse with at least one input button.

50. The device according to claim 42 wherein said data input device comprises a key of a touch pad.

51. The device according to claim 42 wherein said sensor analyzes an angle of said light beam to determine a spatial position of the object.

52. . The device according to claim 42 wherein said sensor analyzes an angle of said light beam and a time for the beam to be reflected back from said object to a reference to determine a spatial position of the object

Sanford T. Colb Reg. No. 26,856